A newsletter of the
LTAP
Issue Number 56, Fall 1997

Bulletin

Using Other Metals Next to Galvanized Steel

What happens when I put galvanized steel together with aluminum parts, or put aluminum sheets on galvanized steel studs?

This question is frequently asked when two dissimilar metals are placed in contact with each other. As a rule of thumb, the higher the electrical potential difference the greater the possibility of a reaction.

The chart below shows the electrode potentials of metals in sea water. If two metals with different potentials are placed in contact and there is a conductive medium, such as sea water or condensation, there can be a reaction commonly known as a galvanic cell.

Electrode Potentials of Metals in Sea Water

Material	*Potential (Volts)*
Magnesium	-1.55
Zinc	-1.10
Aluminum	-0.86
Cadmium	-0.77
Cast Iron	-0.68
Carbon Steel	-0.68
Stainless Steel	-0.61
Lead	-0.57
Solder (50Pb/50Sn)	-0.52
Tin	-0.49
Copper	-0.43
Aluminum Bronze	-0.41

In the case of zinc and aluminum, there is only a slight chance of a reaction because of the relatively small change in potential between the two metals and the formation of an insulating film on the surface of the aluminum.

One of the key factors in the reaction between dissimilar metals is the contact surface area. A severe reaction can occur when a large cathode (more positive potential) is in contact with a small anode (more negative potential). In this situation, corrosion rates can increase dramatically.

Another key factor in the determination of the corrosion of two dissimilar metals is the presence of a conductive substance. In many cases condensation does not provide enough conductance to start the corrosion process. Whenever possible, the best solution to this type of corrosion is to provide an insulating barrier between the two dissimilar metals.•

(Source: Reproduced with permission from the American Galvanizers Association. Article in their "Galvanizing Insights," Summer 1997.)

T2

The Northwest Technology Transfer Center
TransAid-WSDOT

Contents

Director's Column

What is this LTAP?

by George Crommes

You may have noticed, that we have added the letters "LTAP" to our T^2 logo. We now can be called your "LTAP T^2 Center." LTAP stands for the title of the national FHWA program that helps to fund your Center. The Local Technical Assistance Program (LTAP) provides for local highway agencies improved access to highway technology to meet the growing demands placed on local roads, bridges, and public transportation.

Part of LTAP includes the T^2 Centers of which the Northwest Technology Transfer Center is one.

So in the future, with 57 centers in the USA and Puerto Rico, you can refer to us as your T^2 LTAP Center or your T^2 Center. Both are correct.

George

Auto Innovations Promise Air Quality Improvements

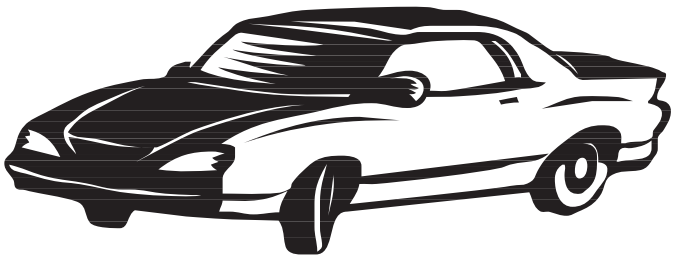
A superclean engine that helps purify the air, and a hydrogen fuel-cell that would use gasoline and emit water were two technological breakthroughs announced this week that could dramatically alter the environmental impact of automobiles.

On Monday, the Honda Motor Co. Ltd. announced the development of a new superclean gasoline that could produce exhaust that is cleaner than the air taken in. The new Zero-Level Emission Vehicle engine (Z-LEV) produces only one-tenth of the emissions permitted by the nation's eight most stringent regulations, the California air quality standards. Auto executives said that the engine is easily built and could be in production in about two years. The engine operates on four cylinders and is gasoline powered. It achieves low emissions through the use of a new hybrid exhaust catalyst that traps hydrocarbons during engine start-up, cleaning them after they reach operating temperature.

On Tuesday, Energy Secretary Federico Peña announced what he called a "revolutionary breakthrough," a gasoline fuel cell that would reduce auto emissions by 50 percent. The new technology was developed by two companies, Arthur D. Little of Cambridge, Massachusetts, and Plug Power L.L.C. of Latham, New York, with assistance from the Department of Energy.

The new fuel system consists of a fuel processor that converts gasoline, or other fuels, into a hydrogen-rich fuel, a converter that removes carbon monoxide from the fuel, and a hydrogen powered fuel cell that would power the vehicle. The Chrysler Corp. intends to introduce a "near-prototype" vehicle using the cell in 1999, Peña said.•

(Source: AASHTO Journal, October 24, 1997.)



Paving Road Shoulders With Porous Asphalt

A recently completed study of the effect of road shoulder material on stormwater runoff quality and quantity found that porous gravel shoulders not only provide traditional roadside benefits but also reduce runoff volumes and decrease pollutant concentrations. The King County Department of Transportation, which cosponsored the study with the Washington State Department of Transportation, plans to use the results to initiate a program to pave shoulders with porous asphalt.

Jon Cassidy, supervising engineer for the King County Roads and Engineering Division, said the results are "extremely promising" and that the use of porous asphalt for road shoulders could "cut the cost of capital improvements such as construction or widening in half."

The porous asphalt shoulders demonstrated the greatest ability to reduce runoff volumes. They also consistently performed better than the gravel and conventional asphalt shoulders in reducing pollutant concentrations.

In King County, Washington, road shoulders have been constructed of either gravel or conventional asphalt. The study Shoulder Stormwater Runoff Control evaluated the performance of gravel, conventional asphalt, and porous asphalt road shoulders. Researchers investigated the operational, hydraulic, hydrologic, and runoff water quality characteristics of the three shoulder materials to determine whether porous asphalt road shoulders can simultaneously provide the operational and environmental benefits desired by transportation and regulatory agencies in Washington.

Porous asphalt pavements consist of an open-graded, coarse aggregate held together by asphalt cement. They allow water to penetrate and flow through the pavement to a sub-layer. Because of their design, porous asphalt pavements can attenuate runoff. This means they can help reduce the pavement puddling that causes vehicle hydroplaning and headlight glare, reduce traffic noise, reduce both the volume and rate of stormwater runoff, remove pollutants in stormwater runoff, and increase groundwater recharge rates.

To test the performance of the three shoulder materials, University of Washington researchers Richard R. Horner, research associate professor of landscape architecture and civil engineering, and Brian W. Mar, professor of civil engineering, constructed an experimental monitoring site along a heavily traveled, two-lane road north of Redmond, Washington. The three shoulder materials were tested in duplicate, along with two controls that sampled runoff directly from the roadway (without a shoulder treatment).

Between November 1995 and August 1996, eleven storms of various sizes and conditions were successfully sampled. Ten of the eleven storms occurred in November through April, during the Pacific Northwest wet season. Six additional rain simulation experiments provided a clear picture of the hydraulic characteristics of the shoulder treatments. The porous asphalt shoulders demonstrated the greatest ability to reduce runoff volumes, particularly during small storms typical of the Pacific Northwest.

Although all three shoulder materials reduced pollutant concentrations, the porous asphalt shoulders consistently performed better than the gravel and conventional asphalt shoulders in reducing pollutant concentrations. The concentrations of pollutants in the runoff from the porous asphalt shoulders were typically 30 to 60 percent lower than the concentrations from the conventional asphalt shoulders during the wet season. The pollutant removal rates of the porous asphalt shoulders also equaled or exceeded the reported removal rates of infiltration basins and constructed wetlands.

Generally, the three shoulder materials all operated well. The porous asphalt shoulders showed no signs of rutting or other structural failure, and core samples revealed no ice or frost damage. The porous asphalt shoulders also showed no signs of clogging throughout the monitoring period, although King County intends to further study both the material's potential for clogging and the length of its service life.

The results of this study show that the use of porous asphalt on road shoulders along county highways holds promise. Although the installation costs of porous asphalt shoulders may be somewhat higher than the costs of constructing shoulders with gravel or conventional asphalt, the long-term cost savings may be significant.

Cassidy noted that it will be cheaper to pave shoulders than to maintain gravel shoulders, which require constant grading and filling. He also expects porous asphalt shoulders to last longer than the constructed roadway because they are not subjected to traffic. In addition, because porous asphalt can reduce peak runoff discharge rates, in appropriate places King County will be able "to meet detention and treatment requirements for stormwater with an 8-foot shoulder, rather than purchasing land and right-of-way to build additional road runoff detention facilities and construct wetlands," Cassidy said.

The project report (WA-RD 429.1) can be obtained through WSDOT's Research Office, at (360) 705-7971.•

In the News

☑ New Addition to T2 Center

Larry Roediger, who was TransAid's environmental procedures analyst and who recently coordinated several competitive grants using oil rebate funds, has recently been assigned to the T2 Center. Larry will be assuming some of the duties of Dave Kaiser who was the T2 Training Coordinator reassigned to TransAid's Federal Grants Office effective August 1, 1997. Other duties for Larry include the searching of innovation opportunities for possible implementation, providing technical analysis and review of T2 Center workshop materials, providing increased promotion of available training through the T2 Center or that which T2 supports, and continued environmental support to local agencies.

Larry is a graduate of Seattle University with a BS in Civil Engineering and a MS in Engineering from the University of Washington. Larry has worked for WSDOT for over 30 years in such areas as construction, design, plan review, design report review, highway noise studies, public transportation, transportation demand management, and state competitive grants.

Please call Larry if you need help in the identification of your agency training or environmental needs. His telephone number is (360) 705-7917. It should be noted that this is a different telephone number than that used by Dave Kaiser.•

☑ Workshop on Public Involvement in the Works

WSDOT Staff Development Office is planning a five-day class on public involvement. To be held in the spring of 1998 (March-April) in the Seattle area, the class will cover: Citizen Participation by Objective and Systematic Development of Informed Consent (SDIC).

Approximately ten spaces will be made available for local agency people. The amount of registration fees will be determined later for the five-day class.•

☑ $100,000 Grant Awarded to Evaluate Roadway Data Collection Methods

The Northwest Pavement Management Association (NWPMA), working through the TransAid Service Center, has received a $100,000 grant from the Office of Technology Applications of the Federal Highway Administration (FHWA). The grant is for further evaluation of automated data collection techniques.

In 1996, TransAid, along with the NWPMA, CRAB, the Northwest Technology Transfer Center, WSDOT's Data Office, Research Office, Materials Lab, and a number of Oregon agencies, sponsored and published a report which focused on Automated Data Collection as it related to pavement distress collection.

The report attracted national attention and the Association was encouraged to apply for additional funding to evaluate other automated data collection methods as they relate to local agency public works applications. The new study will include evaluations of Global Position Systems collection, Geographic Information Systems integration, as well as road inventory data collection activities.

The full scope of work is being adjusted to accommodate requested changes from FHWA. The evaluation will occur next spring and summer and the preliminary results will be discussed at the NWPMA Fall Conference in 1998.•

(Source: TransAid's Deputy Secretary's Focus Report, September 1997.)

In the News (continued)

☑ Vehicle Detector Clearinghouse Formed

In an effort to develop standard test protocols for commercially-available vehicle detectors, the Vehicle Detector Clearinghouse has been established at Southwest Technology Development Institute. The clearinghouse is under contract with FHWA to provide information to transportation agencies on the capability of detectors and to share information on the tests and test procedures.

The Institute is located at New Mexico State University in Las Cruces, New Mexico. Its web site address is:

www.nmsu.edu/~traffic

From this home page, technical reports on detection equipment may be searched. Equipment information is available on 54 detectors from 19 vendors with links that provide more detail on each product. Detectors for traffic monitoring, vehicle classifications, weigh-in-motion, and speed monitoring are included in the lists. Links are also provided to state and federal DOT agencies, research and testing agencies, and other transportation resources.

(Source: Alabama T^2 Center Newsletter, March 1997.)

☑ *New Publication:* Asphalt in Pavement Maintenance, MS-16 Third Edition, Asphalt Institute

This "how-to-do-it" manual describes pavement maintenance and repair methods which apply to all regions, as well as how to stretch maintenance dollars. It is available for $12, plus $5 per order, shipping and handling from:

Asphalt Institute
Research Park Drive
P.O. Box 14052
Lexington, KY 40512-4052

(606) 288-4960
Fax (606) 288-4999 •

☑ Report Issued on Bicycle and Pedestrian Planning

A report issued last week provides an overview of over 200 state and metropolitan planning organizations' (MPO) long-range transportation plans and best planning practices for bicycling and walking.

Titled *Bicycle and Pedestrian Planning Under the Intermodal Surface Transportation Efficiency Act (ISTEA): A Synthesis of the State of the Practice*, the report was prepared by the Bicycle Federation of America and the University of North Carolina Highway Safety Research Center for the Federal Highway Administration. Copies are free and can be ordered by contacting the National Bicycle and Pedestrian Clearinghouse at 1-800-760-6272.•

(Source: AASHTO Journal, August 22, 1997.)

☑ Free Catalog Features Concrete Pavement Resources

The American Concrete Pavement Association (ACPA) has published a new Publications Catalog that features 120 publications, audiovisual materials, and computer software programs.

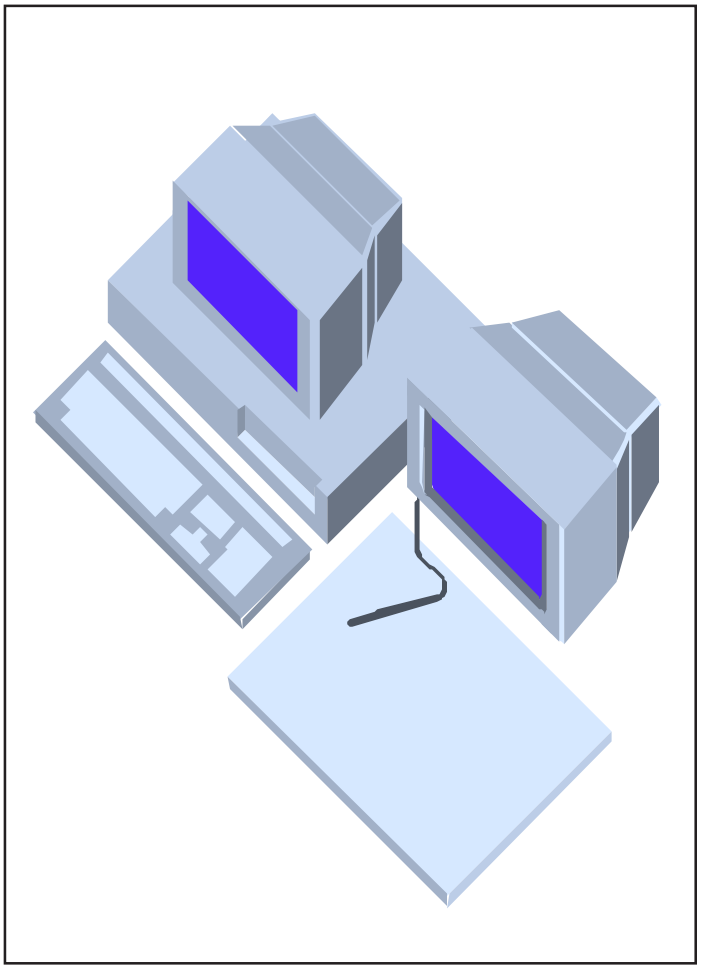
The 20-page catalog includes a range of technical resources designed for contractors, consultants, and specifiers, as well as marketing materials designed for individuals and organizations promoting concrete pavements, cement, and ready-mixed concrete for highways, airports, local roads, and streets.

To order a free copy of the ACPA Publications Catalog, please call toll-free 1-800-868-6733 or fax (847) 966-9666.•

(Source: ACPA News Release.)

The Year 2000 Issue

The date change for Year 2000 poses one of the most significant business challenges faced in the information age. The Year 2000 problem is rooted in a decades old industry practice to minimize expensive data storage and data entry time in computer programs by storing the year as two digits (97) instead of four (1997). This becomes a problem when computer systems interpret “00” as “1900” rather than “2000.” Software performing arithmetic operations, comparisons, or sorting on a date field, fail or yield incorrect results when working with years beyond 1999.



Many systems will feel the impact of the date change well before 2000. For example, many software applications automatically enter dates beyond 1999 in calculating projections long before the date actually arrives. It doesn’t just affect computers. The proliferation of electronic controls in virtually every type of equipment — everything from elevators to traffic signals — means that unless we identify and resolve potential problems, these devices could cease to operate.

If not addressed, this problem could have serious impact on agency employees, their public and private partners, and the citizens of Washington State. Both service interruption and expensive litigation could be a result if we do not do assessment, testing, and conversion of the systems and equipment that may be affected. That is why WSDOT has decided to make the Year 2000 Project a number one priority.

A coordinated approach to the Year 2000 problem requires placing first priority on fixing the problem on mission-critical systems. In Washington, all state agencies have been instructed to address Year 2000 date conversion activities in their Strategic Information Technology Plans (required by the Department of Information Services). The Attorney General’s Office has advised that, in order to minimize liability, agencies must make a good faith effort to find Year 2000 date field solutions that materially work. The Office of Financial Management has instructed agencies to make Year 2000 compliance the first priority in preparing their information technology budgets. WSDOT is currently defining what Year 2000 compliance means to the department and setting criteria to achieve readiness of mission-critical systems and services.

How does the Year 2000 Issue affect your agency? The cover story of the June 2, 1997, issue of Newsweek titled “The Day the World Shuts Down” brings the problem into focus.

(Source of article materials: Year 2000 — If you think it’s “just a computer problem” you may be in for a shock! WSDOT — Finance and Administration Service Center Management Information Services, August 1997.)

Ethics in Professional Practice

by George Crommes, P.E.

It doesn't matter whether professionals work for the public or private sector, they adhere to a code of ethics. Both the American Society of Civil Engineers, and the National Society of Professional Engineers have ethics codes supported by their members. Other professionals, e.g., architects, planners, doctors, dentists, also adhere to their codes of ethical practice.

Dr. Ron Bucknam of the University of Washington and Director of the Professional Engineering Practice Liaison Program (PEPLP) has initiated an interesting homepage entitled "Applied Ethics in Professional Practice." Dr. Bucknam's homepage has some very useful information and guides on ethical matters. A "Case of the Months" lets the browser review a real life case and choose among listed solutions, some legal, some not legal or ethical, and of course legal and ethically correct ones. Viewers are invited to participate in the action by voting among the alternatives. Viewers are also asked to submit real life case studies with names and locations sufficiently obscured to protect those involved. Results from previous month's case studies are given and recommendations by a review committee of peers as well as an epilogue of the persons involved.

Dr. Bucknam and his associates have created ethical values for the development of an applied ethics in professional practice program. They are shown in the box on this page. To me, they make sense and should be followed in our daily professional practice.

Take a look at Dr. Bucknam's homepage at http://www.engr.washington.edu/~uw-epp/Pepl/Ethics. Perhaps you too can offer a case study for review regarding professional ethics.

If you are a professional, contact the association you belong to and get a copy of their code of ethics and refer to it daily. Perhaps you may want to keep Ron's Recommended Core Ethical Values in a prominent place to provide notice of those values that are important in ethics.

Recommended Core Ethical Values

1. Integrity
   - exercising good judgment in professional practice
   - adherence to ethical principles
2. Honesty, including:
   - truthfulness
   - fairness
   - sincerity
3. Fidelity, including:
   - faithfulness to clients
   - allegiance to the public trust
   - loyalty to employer, firm or agency
   - loyalty to the profession
   - for the theist, faithfulness to God
4. Charity, including:
   - kindness
   - caring
   - good will
   - tolerance
   - compassion/mercy
   - adherence to the Golden Rule
5. Responsibility, including:
   - reliability/dependability
   - accountability
   - trustworthiness
6. Self-Discipline, including:
   - acting with reasonable restraint
   - not indulging in excessive behavior

An Update:

Individual Productivity — Understanding What Makes It Happen

by George Crommes, P.E.

As your T[2] Director, I am obligated to provide highlights and brief summaries of subjects that may impact you as a public employee. This brief paper on productivity cannot replace the numerous textbooks written on the subject or on the various items which may impact productivity. My hope is that you may learn to recognize those key things that affect productivity in your agency and to ask whether you can improve upon those for which you have control. *Consider this writing to be a brief and simplistic presentation of a complex subject.*

As shown in the figure, the beginning point for considering productivity improvements is the agency's environment. The following discussion starts with the end product, productivity, and works back through the figure to the beginning point, the agency's environment.

Productivity is affected by two major things: the employee's job performance and the technological development available for use. Technological development includes proper raw materials, equipment, methods and process, and job layout. Usually, an agency has good control on the "technological development." Job performance is more complex. As shown in the figure, it is affected by many items starting with the organization's structure, policies, and work climate.

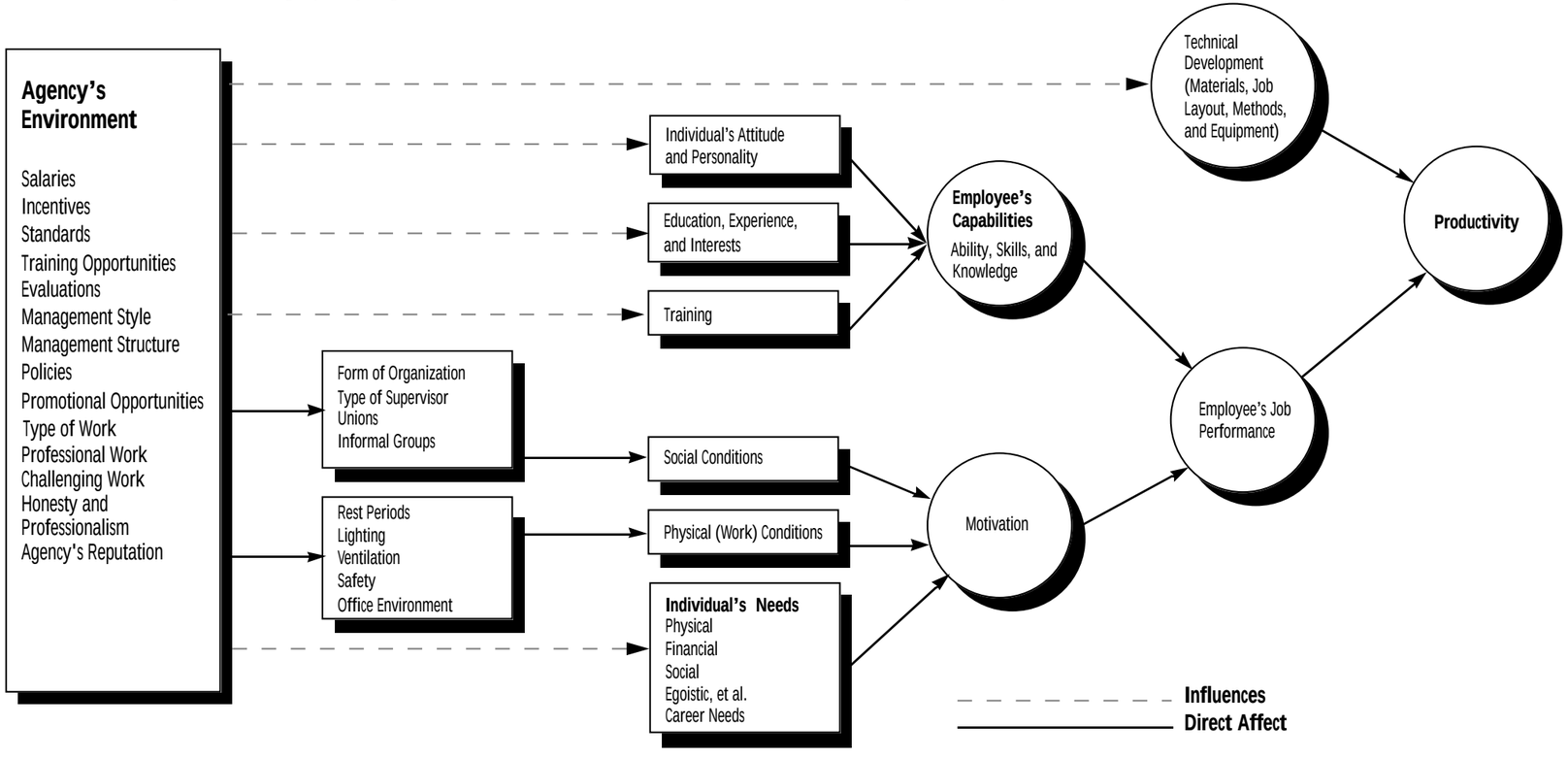
Working backwards on the figure from the box labeled "job performance," we see that this is affected by two key things: (1) the employee's capabilities (abilities, skills, and knowledge) and, (2) the employee's motivation. Any improvement in either one of these will improve the employee's job performance and, hence, productivity. For example, training can improve the employee's skills as well as improve his motivation, because he feels that the agency "cares enough" to provide training.

Motivation of the employee is affected by the social and physical conditions of the job/office as well as his social, financial, physical, and egoistic needs. Hence, improvements to the social and physical needs at the work place and recognition of the individual's needs can provide additional motivation and improved productivity.

The employee's capabilities (his abilities, skills, and knowledge) can also be improved by providing quality work experiences, promoting additional education, and by providing training opportunities. All of this as shown on the figure impacts the employee's job performance which affects productivity.

An individual's attitude and personality impacts his capabilities. Attitudes can be improved. The agency's environment influences these. An open, team-oriented, democratic work environment can have a very positive effect on an employee's attitude and even his personality. Especially important is providing work that matches up with a person's professional career and desires. These, in turn, affect the employee's capabilities, which affect his job performance, which affect productivity.

And finally, the agency's environment, as shown on the figure, is the beginning point for considering productivity improvements. The agency's environment impacts or influences all of the elements affecting productivity.



Free Publications From Your T^2 Center

For Washington recipients only.

Name _____

Agency _____

Address _____

City and Zip _____

Phone _____

Check those items you would like to order.

____ Current Application and Successful Implementation of Local Agency Pavement Management in the United States, FHWA, 1997

____ Scrap Tire Utilization Technologies, NAPA

____ State-of-the-Art Survey of Flexible Pavement Crack Sealing Procedures in the United States, CRREL, 1992

____ Maintenance of Aggregate and Earth Roads, NWT^2 Center (1994 reprint)

____ International State-of-the-Art Colloquium on Low-Temperature Asphalt Pavement Cracking, CRREL

____ The Engineer's Pothole Repair Guide, CRREL

____ Geotextile Selection and Installation Manual for Rural Unpaved Roads, FHWA

____ Guide to Safety Features for Local Roads and Streets, FHWA, 1992

____ Family Emergency Preparedness Plan, American Red Cross, et al.

____ Getting People Walking: Municipal Strategies to Increase Pedestrian Travel, Rhys Roth, Energy Outreach Center

____ The Superpave System – New Tools for Designing and Building More Durable Asphalt Pavements, FHWA

____ A Guide to the Federal-Aid Highway Emergency Relief Program, USDOT, June 1995

____ Asphalt Seal Coats, T^2 WSDOT

____ Pothole Primer — A Public Administrative Guide, CRREL, 1989

____ Redevelopment for Livable Communities, Rhys Roth, Energy Outreach Center

____ Manual of Practice for an Effective Anti-Icing Program, FHWA, 1996

____ A Guidebook for Residential Traffic Management, NWT^2 Center, 1994

____ A Guide for Student Pedestrian Safety, KJS, 1996

____ A Guide for Local Agency Pavement Managers, NWT^2 Center, 1994

____ Local Agency Pavement Management Application Guide, NWT^2 Center, 1997

Video

____ Walkable Communities: Designing for Pedestrians

Videotape of the class by Dan Burden. Four tapes, 5.5 hours. Available for purchase ($75) or can be borrowed by local agencies. Call T^2 Center for further information (360) 705-7386.

Workbooks and Handouts From T^2 Center Workshops

____ Handbook for Walkable Communities, by Dan Burden and Michael Wallwork

____ Traffic Calming: A Guide to Street Sharing

____ Planning, Design, and Maintenance of Pedestrian Facilities, FHWA, 1989

____ Geosynthetic Design and Construction Guidelines, National Highway Institute

____ Construction of Portland Cement Concrete Pavements, FHWA, 1996

Self-Study Guides

The following noncredit self-study guides are available through WSDOT Staff Development and can be obtained from the T^2 Center. An invoice will be sent with the books.

____ Technical Mathematics I, $20

____ Technical Mathematics II, $20

____ Contract Plans Reading, $25

____ Basic Surveying, $20

Brief (One- to ten-page) T^2 Handouts

____ Asphalt Pavement Recycling, Crommes, Montague, 1993

____ Mitigating Road Hazards, Crommes, 1997, (Revised)

____ Standing on Your Own Two Feet: And Other Reasons to Use Foot Protection, Parlay, 1991

____ Tips for Reducing Tort Liability (articles from various sources), 1992

____ How to Coach a Winning Team, Louisiana State University

____ Depression is Serious Business, Parlay, 1991

____ Do You Communicate When You Talk?, NACE and LAT^2 Center

____ The Ten Commandments of Political Engineering, CAT^2 Center, 1992

____ Using a Gantt Chart, Parlay 1996 (New)

____ Characteristics of Effective Decision Makers, Parlay 1996 (New)

____ Fighting Burnout, Parlay 1996 (New)

____ First Steps for New Supervisors, Parlay 1996 (New)

____ Managing Your Work Environment, Parlay 1996 (New)

____ Characteristics of a Successful Project Manager, Parlay 1996 (New)

____ Effective Delegation, Parlay 1996 (New)

____ Supervising Older Workers, Parlay 1996 (New)

____ Four Sources of Everyday Training, Parlay 1996 (New)

____ Four Reasons to Call a Meeting, Parlay 1996 (New)

Orders may be faxed, mailed, or phoned to Laurel Gray
Phone: (360) 705-7386,
Fax: (360) 705-6858
Mailing Address: NWT^2 Center,
WSDOT/TransAid, P.O. Box 47390,
Olympia, WA 98504-7390

NACE's Engineer of the Year Awards

by Gaylon Davis, Chair, Awards Committee

It's that time of year again. Each year, the National Association of County Engineers (NACE) awards the Rural and Urban Engineer of the Year Award to a NACE Voting Member who has made an outstanding contribution to the county engineering profession, and to the NACE organization. These annual awards will be presented at the 1998 NACE conference in Rapid City, South Dakota which is being held April 26-30, 1998. Each state is limited to one nominee for each award. The Rural award is for counties with a population of less than 100,000, while the Urban award is designated for a population greater than 100,000. The Board of Directors approved this adjustment to the population as well as other refinements to the grading and valuation of categories. Each nominee will be rated in several categories, including major achievements, professional career, NACE involvement, education, professional licensing, and involvement in professional and community organizations. The application for your nominees should be submitted by the president of your state organization to the Awards Committee Chair no later than December 30, 1997. Application forms can be obtained through NACE, 440 First Street NW, Washington, D.C. 20001-2028.

(Source: Adapted from materials in NACE News, October 1997.)

Memo

49th Annual Road Builders' Clinic

March 10-12, 1998
Coeur d'Alene Resort
Coeur d'Alene, Idaho

Featured Sessions

- Environmental Solutions
- Innovative Road Projects
- New Products Case Studies
- Roadway Maintenance for Road Builders
- New Technologies

Plus numerous exhibits of road building equipment, supplies, construction products, surveying equipment, concrete and pavement materials, and more.

Registration Fee: $249
Exhibitor Fee: $325

Contact WSU Conferences and Institutes (509) 335-3530 or 1-800-942-4978.

Work Smarter in These Stressful Times: Expand Your Knowledge

Use WSDOT's Library – A Free T^2 Resource Information on Transportation:

Planning	Construction
Design	Maintenance
Management	Materials

Call (360) 705-7750

Training Opportunities

For more information, contact the training provider listed. For additional training needs contact the Northwest T² Center at (360) 705-7917 or 1-800-973-4496.

Classes and Workshops

NWT² Center, WSDOT
(360) 705-7386, Fax (360) 705-6858
http://www.wsdot.wa.gov
(Click on TransAid, then on T².)

T² Roadshows

Spring roadshows began in March 1998. Contact the trainer after March 1 at (360) 705-7385, or call early to the Center at (360) 705-7386.

Staff of the T² Center are working with WSDOT's Staff Development Office, the Materials Lab, and the Highways and Local Roadways Division, in developing upcoming workshops. Each will allow a certain number of local agency folks to participate. More details will be given upon formalization of the classes.

- Systematic Development of Informed Consent-Plus. This 40-hour, five-day class will be held in the Seattle area early in 1998. The course keys on working with citizens on controversial public works projects. Citizen participation in public projects is the theme. $500.
- Interpretive Planning Workshop. This three-day workshop covers the basics of planning and communication needs of interpretive centers, sites, and auxiliary facilities. To be offered in early 1998.
- Construction Inspection Type Classes. Local agencies have taken advantage of these classes offered by the WSDOT Regional Trainers. A new series of offerings are being planned for January-March 1998.

Resources Partners
(206) 223-1023

Privacy: Employer's Rights and Responsibilities in the Electronic Workplace. December 4, Bellevue. $115.

Workplace Violence. December 9, Bellevue. $200.

WSDOT Environmental Affairs Office
Contact Dale Grenier at (360) 705-7478
http://www.wsdot.wa.gov
(Click on Environmental Affairs Office, then on training.)

Construction Site Erosion and Sediment Control Certification. December 15-16, Poulsbo; December 18-19, Seattle; January 8-9, Lacey; January 22-23, Bellevue; February 5-6, Longview; February 19-20, Mount Vernon; March 12-13, Wenatchee; March 16-17, Spokane; April 2-3, Yakima. To register for this classes, please contact Laurel Gray in the T² office.

National Transit Institute
(908) 932-1700, ext. 19
Contact Susan Greenstone

Public Involvement in Transportation Decision Making. March 10-12, Portland, Oregon. Free.

Coordinating Transportation and Land Use. April 29-May1, Seattle. Free.

Transit Safety Institute
(405) 954-3682
Contact Marge Carr

Integrating Transit and Highway Intelligent Transportation System Application. September 23-25, Seattle.

OSHA Training Institute Education Center
(800) 326-7568, Fax (206) 685-3872

Principles of Ergonomics. March 9-11, Seattle. $415.

Washington Environmental Training Center
(253) 833-9111, Ext. 3369

Asbestos-Cement Pipe Work Practice Procedures. December 12 and February 6, Auburn.

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University of Washington Engineering Professional Programs
(206) 543-5539
http://www.engr.washington.edu/~uw-epp/

Design and Retrofit of Culverts in the Northwest for Fish Passage. December 3 and 4, 1997. $345 (early registration), $375.

Stormwater Treatment by Media Filtration. December 11 and 12, 1997. $345 (early registration), $375.

Effective Writing for Technical Professionals. January 12, 14, 21, 26, and 28, 1998 (five sessions). $320 (early registration), $345.

Fundamentals of Urban Surface Water Management. January 14 and 15, 1998. $345 (early registration), $375.

FE/Engineer-In-Training Refresher Course. February 23 thru April 1, 1998. 12 sessions. $295 (early registration). Twelve-session format includes one half session on test taking strategies.

Civil Engineering (Preparation for the PE). March 3 thru April 7, 1998. Tuesday and Thursday, 7:00 a.m. to 9:30 p.m. $325 (early registration).

TRANSPEED-UW
(206) 543-5539
http://www.engr.washington.edu/~uw-epp/Transpeed/trans.html

Basic Highway Capacity Analysis for Engineers and Planners. December 9-11, Lacey. $180.

Public Works Construction Inspection of Project Management. January 12-13, Spokane. $150.

Construction Inspection of Public Works. January 15-16, Spokane. $150.

Storm Water Engineering. January 21-23. $180.

Management Project Delivery Course. January 26-28, Lacey. $280.

Roadway Value Engineering. February 10-12, Lacey. $180.

Manual on Uniform Traffic Control Devices (MUTCD) Workshop. February 17-19, Lacey. $180.

Roadway Geometric Design. February 25-27, Lacey. $180.

Management Project Delivery Course. March 3-5, Lacey. $280.

Advanced Highway Capacity Analysis. March 11-13, Lacey. $180.

Inspection of Existing Culverts. March 16-17, Seattle. $150.

Legal Liability for Transportation Professionals. March 25-26, Spokane, Gonzaga University. $150.

ASCE
1-800-548-2723
http://www.asce.org/

ACE offers several self-study courses on both audiotape and videotape. Some courses award CEUs. A partial listing of available courses:

- Excavation Safety
- Geosynthetics in Transportation Applications
- Wetlands and 404 Permitting

Washington State University Conferences and Institutes
1-800-942-4978

35th Annual Road and Street Maintenance Supervisor's School-West. December 3-5, Bellevue.

Consensus Building and Conflict Resolution. January 20-22, Pullman.

ATSSA
(540) 898-5449

Worksite Traffic Supervisors Training Course. December 2-4, Lacey.

Washington State Department of Personnel (DOP)
(360) 586-2720

Classes are open to state and local agency personnel based upon spaces available. Some courses have a "charge back fee." Additional classes are offered in Tri-Cities, Vancouver, Walla Walla, Wenatchee, and Yakima. Contact DOP for their latest catalog.

Communication Skills for Supervisors and Lead Workers. February 12-13, Spokane; March 9-10, Olympia.

Delegation: The Key to Empowering People. February 13; Olympia.

Entry Management Development Core Program-Phase I. December 9-12, Olympia; February 23-26, Spokane; March 24-27, Yakima.

Entry Management Development Core Program-Phase II. January 12-14 and March 4-6, Olympia.

Project Management. March 19-20, Olympia.

Leadership Skills that Work. December 17, Tacoma; January 28, Olympia.

Problem Solving and Decision Making. December 16, Seattle; February 9, Olympia; March 5, Tacoma.

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Evergreen Safety Council
(206) 382-4090
1-800-521-0778
Fax (206) 382-0878
http://www.esc.org/

Accident Investigation/Safety Inspections. December 1, Olympia.

Fire Safety/Emergency Response. December 4, Seattle.

Industrial Insurance/Workers' Comp. December 8, Spokane; December 15, Portland.

Traffic Safety/Office Safety. December 10, Seattle.

Computer Programs

The following computer programs may be downloaded from the Internet at http://www.wsdot.wa.gov/TA/T2/COMPUTER/htm.

Design Cost Estimate. A software database program that calculates cost projections based on standard items.

Materials Approval Tracking. A software program designed to track materials data, need, status, and approval of any materials sampling and documentation needed for approval.

HyperCalc. A shareware utility for converting between metric and English units.

Force Account Macros. A series of ready-made Excel spreadsheets and macros to save you time on daily force account calculations and reports, including wage and equipment rates.

APWA CAD Symbol Standards and Menus. A public domain program of standard AutoCAD symbols developed by the Washington Chapter of APWA for use with AutoCAD release 12.

PaveSmart. A software program for implementing a pavement management system based in the WSDOT Pavement Management System.

Conferences and Meetings

1997

Road and Street Maintenance Supervisors' School-West. December 3-5, Bellevue, 1-800-942-4978.

1998

2nd International Conference Composites in Infrastructure. January 5-7, University of Arizona.

TRB 77th Annual Meeting. January 11-15, Washington, D.C., (202) 334-2934.

ATSSA Traffic Expo '98. January 24-26, Long Beach, California. (540) 898-5400. Homepage http://www.atssa.com.

Northwest Transportation Conference. February 4-6, Oregon State University, Corvallis, Oregon.

43rd Annual National Asphalt Pavement Association Convention. February 15-19, Palm Desert, California, (888) 468-6499.

Colorado High-Performance Concrete Showcase. February 18-20, Denver, Colorado, (303) 757-9486.

1998 Road Builders' Clinic. March 10-12, Coeur d'Alene, Idaho.

First International Conference on Urban Public Transportation (ASCE). March 22-26, Miami, Florida.

Wetlands Engineering and River Restoration Conference (ASCE). March 22-27, Denver, Colorado.

One Call Systems and Damage Prevention Symposium. March 29-April 1, Vancouver, British Columbia, Canada.

North American Snow Conference (APWA). April 19-22, Edmonton, Alberta, Canada.

APTA Commuter Rail Conference. April 21-24, San Francisco, California.

ITS America 8th Annual Meeting. May 4-6, Detroit, Michigan.

Conference on Transportation, Land Use, and Air Quality. May 17-20, Portland, Oregon, (800) 548-2723.

APTA Rapid Transit Conference. June 2-6, Atlanta, Georgia.

ASCE 1998 Geotechnical Earthquake Engineering and Soil Dynamic Conference. August 3-6, Seattle.

For a current listing of conferences, check out our web site at: http://www.wsdot.wa.gov/TA/T2/conf.htm

A newsletter of the Local Technical Assistance Program (LTAP)

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Bulletin

The Technology Transfer Center (T^2) Program is a nationwide effort financed jointly by the Federal Highway Administration (FHWA) and individual state departments of transportation. Its purpose is to translate into understandable terms the latest state-of-the-art technologies in the areas of roads, bridges, and public transportation to local highway and transportation personnel.

Any opinions, findings, conclusions, or recommendations presented in this newsletter are those of the authors and do not necessarily reflect the views of WSDOT or FHWA. All references to proprietary items in this publication are not endorsements of any company or product.

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TransAid Service Center

U.S. Department of Transportation
Federal Highway Administration

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